AMENDMENTS TO THE CLAIMS

LISTING OF CLAIMS

Claim 1. (currently amended) A system for performing a scan of a portion of a specimen surface, comprising:

~~a low coherence light energy generating device;~~

a collimator for collimating light energy received from ~~said~~ a low coherence light energy generating device;

a first diffraction grating for receiving light energy transmitted from said collimator and passing nonzero order light energy toward said specimen;

a reflective surface for receiving predetermined order light energy from said diffraction grating;

a second diffraction grating for receiving light reflected from said specimen and from said reflective surface; and

a collimator for receiving light energy from said second diffraction grating; ~~and~~

~~a camera for receiving light energy from the receiving collimator;~~

wherein said first diffraction grating passes light energy only over a portion of the specimen surface having predetermined standardized characteristics, said portion comprising less than half of the specimen surface, and said predetermined standardized characteristics comprising a set of physical attributes varying between specific sections on the specimen surface.

Claim 2. (previously presented) The system of claim 1, wherein said predetermined order light energy is first order light energy.

Claim 3. (previously presented) The system of claim 2, wherein said reflective surface receives nonzero order light energy passed from said diffraction grating.

Claim 4. (previously presented) The system of claim 2, further comprising a blocking element for blocking passage of zero order light energy received from said first diffraction grating.

Claim 5. (previously presented) The system of claim 1, wherein the camera converts an elliptical image of said portion of said specimen into an image having an aspect ratio closer to 1:1.

Claim 6. (previously presented) The system of claim 1, wherein each receiving collimator comprises at least one lens.

Claim 7. (previously presented) The system of claim 2, wherein nonzero order light energy passes from said first diffraction grating toward said reflective surface and said specimen.

Claim 8. (previously presented) The system of claim 2, wherein said first diffraction grating is optimized for zero intensity of its zero order.

Claim 9. (previously presented) The system of claim 2, further comprising means for rotating said specimen surface to expose alternate portions of said surface to said light energy.

Claim 10. (previously presented) The system of claim 1, wherein said first diffraction grating passes light energy over a portion of the specimen surface extending at least from a center of the specimen surface to an edge of the specimen surface.

Claim 11. (previously presented) The system of claim 1, wherein said system performs the scan of the portion of the specimen surface to assess at least one from a group comprising global planarization, erosion, and dishing.

Claim 12. (previously presented) The system of claim 1, wherein said specimen comprises a CMP processed wafer, and said specimen comprises one from the group including:

(a) unpatterned wafers with film;

(b) patterned test wafer with test mask;

(c) patterned production wafer with combination of product and test mask; and

(d) patterned production wafers free of test masks.

Claim 13. (previously presented) The system of claim 1, wherein said system is integrated into a CMP processed wafer production line.

Claim 14. (currently amended) The system of claim 1, further comprising a camera for receiving light energy from the receiving collimator, wherein the camera has zoom capabilities.

Claim 15. (previously presented) The system of claim 14, further comprising at least one translation means from the following:

(a) wafer translation means;

(b) interferometer translation means; and

(c) imaging system translation means;

wherein the translation means reduce the field of view generated by the zoom capabilities of the camera.

Claim 16. (currently amended) A method for inspecting a portion of a surface of a specimen, comprising:

transmitting light energy toward said specimen;

diffracting said light energy into predetermined order light energy;

directing said diffracted light energy toward a predetermined portion of said specimen surface having predetermined standardized characteristics and simultaneously toward a reflective surface mounted substantially parallel to said specimen surface, wherein said predetermined portion comprises less than half of the specimen surface;

receiving predetermined order light energy reflected from said specimen and said reflective surface and combining the received light energy; and

directing said light energy to a light receiving device;

wherein said predetermined standardized characteristics comprise known physical variations between sections on the specimen surface.

Claim 17. (previously presented) The method of claim 16, wherein said predetermined order light energy comprises nonzero order light energy.

Claim 18. (previously presented) The method of claim 17, wherein said diffracting step comprises diffracting for zero intensity of the zero order of the light energy received.

Claim 19. (previously presented) The method of claim 16, further comprising the step of initially calibrating the system prior to said transmitting step.

Claim 20. (previously presented) The method of claim 16, wherein said light energy forms an image, and said directing step comprises altering the image aspect ratio.

Claim 21. (previously presented) The method of claim 16, wherein said method provides light energy to a strip extending from at least a center of said specimen to an edge of said specimen.

Claim 22. (previously presented) The method of claim 16, wherein said method addresses and assesses at least one of the anomalies from a group comprising global planarization, erosion, and dishing.

Claim 23. (previously presented) The method of claim 16, wherein said method is integrated into a CMP process line.

Claim 24. (previously presented) The method of claim 16, wherein said specimen comprises a CMP processed wafer, and said specimen comprises one from the group including:

(a) unpatterned wafers with film;

(b) patterned test wafer with test mask;

(c) patterned production wafer with combination of product and test mask; and

(d) patterned production wafers free of test masks.

Claim 25. (previously presented) The method of claim 16, wherein said light receiving device comprises a camera having zoom capabilities.

Claim 26. (previously presented) The method of claim 24, further comprising translating components to provide a reduced field of view when using the camera zoom capabilities.

Claim 27. (currently amended) A method for inspecting a surface of a specimen, said surface having a surface area, comprising:

disposing a swath of nonzero order light energy having approximate predetermined dimension across said surface of said specimen while simultaneously transmitting predetermined order light energy toward a reflective surface, said swath covering less than approximately half of the surface area of the specimen; and

combining light energy received from said surface and said reflective surface;

wherein said disposing comprises disposing light energy to a portion of said surface having predetermined standardized characteristics, and said predetermined standardized characteristics comprising at least one from a group comprising surface pitch variations, wire density variations, linewidth variations, and line space variations.

Claim 28. (previously presented) The method of claim 27, wherein said predetermined order light energy comprises nonzero order light energy.

Claim 29. (previously presented) The method of claim 27, further comprising collimating light energy prior to said disposing step.

Claim 30. (previously presented) The method of claim 28, further comprising diffracting light energy transmitted from said collimating step and passing diffracted nonzero order light energy toward said specimen.

Claim 31. (previously presented) The method of claim 30, further comprising diffracting and collimating light received from said combining step.

Claim 32. (previously presented) The method of claim 31, further comprising blocking passage of zero order light energy received from said diffracting step.

Claim 33. (previously presented) The method of claim 27, further comprising converting an image of said portion of said specimen into an image having an aspect ratio closer to 1:1.

Claim 34. (previously presented) The method of claim 28, wherein said collimating step employs at least one lens.

Claim 35. (previously presented) The method of claim 28, wherein said diffracting step is optimized for zero intensity of the zero order of the light energy.

Claim 36. (previously presented) The method of claim 27, wherein said method provides light energy to a strip extending from at least a center of said specimen to an edge of said specimen.

Claim 37. (previously presented) The method of claim 27, wherein said method addresses and assesses at least one of the anomalies from a group comprising global planarization, erosion, and dishing.

Claim 38. (previously presented) The method of claim 27, wherein said method is integrated into a CMP process line.

Claim 39. (previously presented) The method of claim 27, wherein said specimen comprises a CMP processed wafer, and said specimen comprises one from the group including:

(a) unpatterned wafers with film;

(b) patterned test wafer with test mask;

(c) patterned production wafer with combination of product and test mask; and

(d) patterned production wafers free of test masks.

Claim 40. (New) The system of claim 1, wherein the set of attributes varied comprises at least one from a group comprising surface pitch, wire density, linewidth, and line spaces.

Claim 41. (New) The method of claim 16, wherein said known physical variations on the surface comprise at least one from a group comprising surface pitch variations, wire density variations, linewidth variations, and line space variations.